

Voluntarily delayed rebreeding and double insemination effects on pregnancy rates of Holstein cows

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During the last decades, the milk production per cow has increased while fertility and mounting behavior have decreased in Holstein cows. Voluntarily delaying rebreeding to a period where the cow is in positive energy balance might help improving pregnancy rates. To overcome the problems associated with estrus detection, the use of a double artificial insemination (AI) technique, where cows are inseminated 1 or 2 days apart, have previously been applied but with inconsistent results. The two main objectives of the present study were 1) to determine if the pregnancy rates were improved when delaying rebreeding to 8 months after calving compared with cows inseminated at around 2 months after calving, and 2) to evaluate the effect of a double AI technique around estrus on the pregnancy rates compared with the use of a single AI per estrus. The dataset comprised 235 observations, each representing one AI, from 62 cows followed for consecutive lactations of 10 months (early rebreeding at 2 months) and one lactation of 16 months (late rebreeding at 8 months). The double AI technique was applied in 41% of the AI recorded. The results showed that even though more cows tended to express mounting behavior at the late rebreeding compared with the early rebreeding (63.3 vs. 45.9% respectively, $P = 0.06$), the pregnancy rate at first AI was not improved (40.0 vs 38.7% respectively, $P = 0.27$). The cows receiving the double AI technique had a lower pregnancy rate compared with the cows receiving a single AI per estrus (45.8 vs. 63.8 respectively, $P < 0.01$). Moreover, use of the double AI technique induced confusion as how to report the reproductive performance in the herd, taking into account the total number of insemination/success or considering only one value per estrus. To conclude, delaying rebreeding to 8 months increased mounting behavior at AI time, but did not increase pregnancy rate at first AI. The double insemination technique had a negative effect on the pregnancy rate at first AI.